

HA2: Unit 8 Rational Expressions Assignment Sheet (Honors)

Date	Day	Objectives	Assignments
Wed., 4/27	1	<ul style="list-style-type: none"> ➤ review of factoring ➤ solve direct, inverse, & joint variation problems ➤ solve variation word problems 	<ul style="list-style-type: none"> • worksheet 1-6
Thurs., 4/28	2	<ul style="list-style-type: none"> ➤ reduce, multiply, & divide rational expressions ➤ add & subtract rational expressions 	p. 501 2-20 even; 28-32 even
Fri., 4/29	3	<ul style="list-style-type: none"> ➤ add, subtract, multiply, and divide rational expressions ➤ Restricted Values 	p. 507 10-20 even; 32-40 even
Mon., 5/2	4	<ul style="list-style-type: none"> ➤ Restricted values ➤ Solving equations with rational expressions using cross product or multiplying by LCD 	p. 515: #6 p. 516: 40 - 52 even <ul style="list-style-type: none"> • Name LCD • List restricted values • Solve
Tues., 5/3	5	<ul style="list-style-type: none"> ➤ QUIZ REVIEW (PRACTICE) ➤ Solving equations ➤ Rate of work 	p. 515 # 24, 25, 32
Wed., 5/4	6	<ul style="list-style-type: none"> ➤ Horizontal and vertical asymptotes ➤ Graphing rational functions 	p. 830 in textbook # 7 - 14 List horizontal and vertical asymptotes Do not graph
Thurs., 5/5	7	<ul style="list-style-type: none"> ➤ Review 	Review for Test
Fri., 5/6	8	<ul style="list-style-type: none"> ➤ Tournament (more review) 	STUDY
Mon., 5/9	9	<ul style="list-style-type: none"> ➤ Rational Expressions TEST ➤ Conics Alternative Assessment DUE 	

Unit 8 Rational Expressions Notes

Variation Formulas:

Direct variation: $y = kx$ Inverse variation: $y = \frac{k}{x}$ Joint variation: $y = kxz$

Rate of Work: part of job done = $\frac{\text{time worked}}{\text{time alone}}$

Adding & Subtracting Fractions:

1. Find the LCD: factor all polynomials (if they have 2 or more terms)
list all common factors once as well as all other factors
2. Change to equivalent fractions
Compare old denominator to the new one
Multiply the numerator by the new factors
3. Add/subtract the numerators; keep the denominator
4. Reduce (factor numerator & denominator to check for common factors to cancel)

Multiplying & Dividing Fractions:

1. Factor all numerators & denominators that have two or more terms
2. If it is division, change to multiplying by the reciprocal of the second fraction
3. Cancel common factors
(one numerator factor that is the same as one denominator factor)

Vertical & Horizontal Asymptotes

Let $f(x) = \frac{p(x)}{q(x)}$ where $p(x)$ and $q(x)$ have no common factors and where $q(x) \neq 0$

Vertical Asymptotes: The graph of “f” has a vertical asymptote at each real zero of $q(x)$
(set the denominator equal to zero & solve)

Horizontal Asymptote(s): The graph of “f” has, at most, one horizontal asymptote.

- a.) If the degree of $p(x)$ is less than the degree of $q(x)$, then the line $y = 0$ is a horizontal asymptote.
- b.) If the degree of $p(x)$ is equal the degree of $q(x)$, then the line $y = \frac{a}{b}$ is a horizontal asymptote, where a is the leading coefficient of $p(x)$ and b is the leading coefficient of $q(x)$.
- c.) If the degree of $p(x)$ is greater than the degree of $q(x)$, then the graph has no horizontal asymptote.

Review of factoring:

- a) check for GCF
- b) if 2 terms: check for difference of two squares: $a^2 - b^2 \rightarrow (a + b)(a - b)$
check for sum or difference of 2 cubes: $a^3 + b^3 \rightarrow (a + b)(a^2 - ab + b^2)$
 $a^3 - b^3 \rightarrow (a - b)(a^2 + ab + b^2)$
- c) if 3 terms: use box method or trial and error
- d) if 4 terms: use grouping by twos